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Operational Marches of Tank and Mechanized Formations.

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Operational Marches

Operational Marches by Tank and Mechanized Formations.

The Patriotic War is rich in the experience of organizing and conducting marches of large troop formations, and especially of formations of tank and mechanized troops. During the war these performed marches as individual tank or mechanized corps or else as components of whole tank armies.

The offensive operations of the Red Army during the summer of 1943 imposed strenuous marching requirements on the tank and mechanized troops. At the same time these operations showed the growth of the knowledge of our officer corps in the organization and execution of operational marches by large tank and mechanized formations.

The Red Army Field Service regulations state that, if railways are available tanks should be moved on these for distances of over 75 kms. But the experience of the patriotic war shows that the tank and mechanized formations frequently had to move on their own for distances of 200 to 300 kms. and more. The lack of convenient means of trans-shipment, has been, and in the future will be, always a difficult problem at the front, as will be the factor of the carrying capacity of the railroads. In the forward areas of the front, the railroads are under constant threat of enemy air attacks and do not always complete the trans-shipment of troops in the required time.

Table 1 gives the data concerning some typical operational marches performed by tank and mechanized formations in different times of the year, day, and locations.

Name of Formation	Date	Terrain Time of Year Weather	Distance Covered	Number Roads	Time Util- ized	Average Speed per day	Av. per hour
3rd. Tank Army (Wheeled Vehicles)	Aug. 15 1942	Roads generally satisfactory. Weather-good.	120-160	-	2.5 days	50-65	-
2nd. Tank Army	Feb 10 1943.	Winter Snowstorm	200-220	1	7days	28-30	3.5- 3.75

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5th. Guards	July 7, Roads fair, 330-380	2	3days 110-130 12-14
Tank Army	1943. weather good		
	on the whole		
4th. Guards	July 7, Conditions 450	1-2	- 150-200 11-12
Tank Corps	1943. similar to		
	above.		
1st. Mechan-	July 7, The same. 200-210	3	- 100-110 4.5-5.
ized Corps.	1943.		

From the above table it can be seen that operational marches over a distance of 200 to 300 kms. is not a rarity and that these occupy an important place in the activity of tank and mechanized troops. Besides, the activity of tank and mechanized formations as mobile troops are more liable to re-grouping on the field of battle than other types of troops. And this characteristic of tank troops obliges all their officers and particularly staff officers to study diligently and carefully previous examples of organizing marches and re-grouping.

The March of the 3rd. Tank Army.

The 3rd. Tank Army was composed of the following units, the 12th. and 19th. Tank Corps, the 154th. and 264th. Rifle Divisions, the 179th. Separate Tank Brigade, the 11/2 Tank Destroyer Artillery Regiment, the 62nd. Rocket Launcher Regiment, the 8th. Separate Motor Cycle Regiment, and the 54th. Separate Motor Cycle Battalion, and was located in the area Chern', Gorbachevo, Leont'yev. On the 15th. of August, 1942, the army received the order to move to the area Kozel'sk. The formations ^{of} the army had to accomplish a march of 120 to 160 kms.

The 3rd. Tank Army completed the march by a combination of methods. The Tank Corps and the rifle divisions were re-located by railway. The Hq of the Army, the motorized rifle brigades of the

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tank corps, the motorized rifle battalions of the tank brigades, the 1172 Tank Destroyer Artillery Regiment and other units having their own motor transport, moved themselves to the assembly area.

Thus the whole road-bound column of the tank army consisted entirely of wheeled vehicles, and that acted favorably on the speed of movement. Only one unit completed its transfer by the end of the 17th. of August. In two and one half days (36 hours) the army accomplished a march of 120 to 160 kms, which consisted of 50 to 65 kms. per day and not 150 kms. as is required by the Field and Combat regulations of the tank and mechanized troops of the Red Army.

The railway stations were completely unprepared for the loading and unloading of tanks, and therefore, the mobile part arrived in segments and only after considerable delay. The slow transfer of tanks delayed the assembly of the entire army by ten days.

Conclusions.

1. The slow assembly of the 3rd. Tank Army in the area Rozel'ska can be explained by the failure of the service elements during the road movements and the unpreparedness of the railroad for the transfer of the tanks.

2. The transfer of a tank army over a distance of 150 kms. should have been done by its own resources. This would have shortened the time of transfer considerably.

The March of the 2nd. Tank Army.

(Sketch map 6 not included in translation. Can be found on page 61 of the original.)

The 2nd. Tank Army which consisted of: the 11th. and 16th. Tank Corps, the 60th. Rifle Division, the 11th. Guards Tank Brigade, the 563rd. and 567th. Tank Destroyer Artillery Regiments, the 29th. Guards Tank Regiment, the 37th. Rocket Launcher Regiment : was disposed in the area Prostov, Shomutov, Verkhov'ye, Yeremino, Solov'yevka.

On the morning of the 13th. of February, 1943, the 2nd. Tank Army received the task to change positions, and during the 15th.-

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16th. of February to assemble in the area Anenkovo, Katek, Dubrowka, Telegino, and be ready to break through the defended enemy position on the western shore of the river Svapa. A march of between 200 and 220 kms. faced the army formations.

For the movement to the new area the army was assigned only one road, and even that one was not entirely free of other traffic. The road was also the supply and concentration route of the troops of the Central Front. Already in the preparation of the march the rules of the Field Service Regulations laying down that tank and mechanized forces should move on separate roads, and, if that were not possible, that they should move in separate echelons, was broken. But the situation did not make it possible to assign a separate road to the formation, and the units of the 2nd. Tank Army were faced, from the beginning, with a difficult march.

Weather conditions made the difficult task even more so. During the time of the movement there was a heavy snowstorm which made the road almost impassable not only for wheeled but also for tracked vehicles. The Army had no snow-clearing equipment, and none was assigned to it. In the end, the army moved under conditions of almost complete absence of roads. This required special organization and planning of the march.

Consequently more of the army remained in one place than completed the march, and the army was spread out over a distance of 150 to 200 kms., and the whole route was filled by the marching subunits of the 2nd. Tank Army. The service elements could not move under these conditions and remained in their departure positions. Furthermore, no technical service points had been organized along the route, not repair stations established, which increased the difficulty of the march.

The march was started on the 13th. of February, but the Army with its tank units did not reach its assembly area until the 19th. that is, three to four days late, and not battle worthy at that.

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Also, the long march along the road had been observed by the enemy, and we lost the element of surprise.

Actually the movement of the individual units and subunits extended even beyond the 19th. of February. Table 2 shows the condition of the tanks of the tank corps and of the 11th. Guards Tank Brigade on the 21st. of February, that is, on the seventh day of the march.

Formations	Number of Tanks			
	in departure position	arrived at assembly area	remained in departure position	broke down along route
10th. Tank Corps	161	38	44	79
11th. Tank Corps	192	104	39	49
11 Guards Tank Brigade	55	40	13	2.
Total	408	182	96	130

Formations	Available Fuel and Oil		Available ammunition in units of fire	
10th. Tank Corps	0.1		1.5	
11th. Tank Corps	0.25		2.0	
11 Guards Tank Brigade	0.1		2.5	

Thus, less than half (44%) of the tanks arrived at the new assembly area, one-third broke down and remained along the road, and about one quarter (23%) remained in their departure positions.

The breaking down of tanks along the road, and particularly the leaving behind of tanks in the departure position, can be ascribed to the lack of preparation of the technical service units, for such a march. The situation along the front was one which allowed for the completion of all the measures made necessary by the requirements of such a march. According to the available POL, the army was in no position to attempt to complete its assignment.

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Some of the army units covered the distance (200 to 220 kms.) in seven days, which gives them an average speed of 28 to 30 kms. per day. If it is assumed that the units were on the move for 8 hours per day, then the average speed of movement was 3.5 to 3.75 kms. per hour.

The 2nd. Tank army received in its assembly area (Anenkovo, Radezh, Dubrovka, Telegrino) the order to move to the departure positions for an offensive in the direction Mikhaylovka, Arbusovo, Armanovo, for the purpose of breaking through the German defences and, following that, to operate with its tank formations in the direction of Trubchevsk - Unecha. The units of the Army were expected to accomplish another march of 70 to 80 kms.

The troops of the 2nd. Tank Army moved into the new assembly area even slower, that is, between the 13th. and the 21st. of February. Units of the 2nd. Tank Army actually spent 8 days on the road, that is, at a speed of 10 kms. per day.

The Commander of the 2nd. Tank Army could only organize an offensive with one motorized infantry division by the 23rd. of February, since the tanks and the 60th. Rifle Division had not assembled completely by that time. Only by the 28th. of February was the assembly of all the parts of the army completed and it was possible to plan our advance. The leading of the army into battle by segments certainly diminished the effectiveness of the progress of the operation and the achievement of its aim.

Conclusion: The march of the 2nd. Tank Army was conducted under extremely difficult weather conditions. The only reason for such a divergence of the speed of the march from the norms laid down by the Field Service Regulations of the Red Army was the serious failure of the Technical Service elements.

The March of the 5th. Tank Army. The 5th. Tank Army, composed of the 29th. and 18th. Tank Corps, the 5th. Guards (Zimovskiy) Mechanized Corps, the 76 Rocket Launcher Regiment and the 678th. Guards Artillery Regiment, were located in the areas of Ostrogozhsk-

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Shubnoye; Kamenka-Karpenkovo; Zabolotovka-Shaposhnikovo. (See map 7 - not included in the translation - see page 64 of the original.)

On the 5th. of July the army staff received warning orders to prepare the troops for battle. At 2300 hours on the 6th. of July orders were received from the Commander of the Steppe Military District to concentrate on the western shores of the river Oskol in the following areas: Saltykovo, Kon'shino, Russkaya, Kholan', Korostovo, Verkhne-Atamanskoye, and to be prepared to advance in the direction of Oboyan' - Kursk. As the result of the instruction the troops were faced with a forced march of between 230 and 280 kms.

Due to the early receipt of the warning orders it was possible to prepare the formations of the army for the move quickly and by 0130 hours on the 7th. of July, that is, two and one half hours after receipt of the orders to move, the main portions of the army were on the march. The difficult situation on the front (the Germans were continuing their attack in the direction Oboyan-Kursk) required that the march be completed without delay.

Conditions for the march were on the whole favorable. An area 30 to 35 kms. wide, with several roads, had been assigned to the army for the move. The march of the corps was organized along two roads, as shown on sketch map 7. For the protection of the army in the assembly area an advance guard of the following composition had been sent out: the Separate Guards Red Banner Motor cycle Regiment, the 53rd. Guards Tank Regiment, the 689 Guards Tank Destroyer Artillery Regiment, one battery of the 678 Howitzer Artillery Regiment. The Advance Guards reached the area of Prokhnovo in the middle of the 7th. of July and occupied a position covering the assembly and departure of the army's main force.

The main force reached its assembly area by the morning of the 8th. of July. If one considers that most of the day was used up in the dispersal of the arriving troops to their locations, it can be said that the army completed a march of 230 to 280 kms. in two days.

At 0100 hours on the 9th. of July the staff of the 5th. Guards

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Army received the order to move to the area Bobrshevo, Bol. Psinka, Veselyy, Aleksandrovskiy, Bol. Seti by the end of the day (9th. of July), with the assignment to be prepared to cut off an enemy attack which was making headway. The army had to undertake another march of about 100 kms. The army's formations completed this march successfully and well within the time laid down for it, they arrived in their assigned positions and began the preparation for an attack. An advance guard of the same composition as the one used on the 7th. of July was sent out into the area of the town of Obayan.

Therefore, units of the 5th. Guards Tank Army within three days of uninterrupted marching covered a distance of 330-380 kms., that is, an average of 110-130 kms. per day/ The army units maintained their full battle readiness. The appearance of the 5th. Tank Army on the front was therefore entirely unexpected to the Germans, and this surprise was increased by its readiness for battle.

The details of the march of the 5th. Tank Army are given in Table 3.

The data given in Table 3 should not be taken as typical for a forced march, which conditions (and orders) required from the units of the 5th. Tank Army. The quoted data is of considerable interest from the point of view of what it is necessary to learn for the organization of marches of tank and mechanized troops.

During the march the formations of the army spread out twice and assembled twice. The table shows the time used up in spreading out and contracting the column twice.

It can be seen from the table that of the total of 72 hours spent on the march, the actual time spent on the move by the formations was 35 hours. Thus the overall average speed actually was not more than 8 km. per hour. When it is taken into consideration that the vehicles were not utilized any more than 9 to 10 hours in 24, then the average speed of the march was 12-14 km. per hour.

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Name and Composition of column	Length of route	Length of column	Time required to form column	Time required to assem- ble column	Time for halts	Time of march	Av. Sp- km/hr ching
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(Right column)

a. Advance Guard	330	8	2	1	4	50 12- 14.
b. 29th. Tank Corps, Motorized AA Artill- ery Regiment, of the AA Artillery Division, 678 Howitzer Artillery Regiment (less one battery).	330	60	10	5	4	

Total	-	68	12	6	4
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(Left column)

a. 13th. Tank Corps	380	60	10	5	4	35 12 -14
b. 5th. Guards <i>Imenetskiy</i> Mechanized Corps, 76 Rocket Launcher Regim- ent, echanized AA Artillery Regiment of the AA Artillery Division	380	80	12	6	4	

Total	-	140	22	11	4.
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The 5th. Guards Tank Army received an order to move by a forced march, but the above table shows that it moved at speeds laid down by the Field Service Regulations for normal marches. The failure to fulfil the norm set for forced marches was caused mainly by the fact that the army moved in two columns and was forced to move two corps along one road and that could not but reduce its speed.

The speed of movement of the forward elements which, in the

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main, were wheeled, fully met the requirements for forced marches.

In the above table only the average speed of the army formations as a whole is given, and the average speed of movement of the 29th. Tank Corps, moving along the right hand column, was actually much higher than the speed of the tank formations in the left column.

Conclusion: The Staff of the 5th. Guards Army in planning the march did not take fully into consideration the large number of earth roads in the area of movement, and as a result, the left route was heavily overloaded. The troops arrived in their assembly areas in full order, ready to conduct immediately a determined battle.

The March of the 4th. Guards Kantemirovsk Tank Corps The 4th. Guards Kantemirovsk Tank Corps completed a number of intense forced marches from the area Zemlyansk into the area Oboyan' (Sketch 8 - not included in the translation, can be found on page 67 of the original).

The conditions for the march of the 4th. Guards Kantemirovsk Tank Corps were generally satisfactory. The available roads allowed the corps to move along two and sometimes along three roads. The weather remained good.

The units of the 4th. Guards Kantemirovsk Tank Corps started their movement from the area Zemlyansk, Stadintsa, S. Beduga, at 11 o'clock on the 7th. of July, 1947. By 2300 hours on the same day, they had completely assembled in the area east of Livi, having travelled during twelve hours a total distance of 150 km. at an average speed of 12.5 km. per hour.

The Corps spent 48 hours in the area of Livi, which gave the units an opportunity to conduct technical inspection of its equipment, to eliminate shortages, and refill with gas and oil.

During the night from the 9th. to the 10th. of July the Corps, as ordered by the Commander of the 27th. Army, accomplished a 100km. march and reached the area of Topki, Khmelevaya, with all of its units intact. The night march was done along three routes, for which the service elements had prepared, and this assisted in achieving the

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average speed of movement of 10-12 km. per hour.

When the forward elements of the 4th. Guards Pantemirovsk Tank Corps reached the area of Khmelevaya, the staff of the right-hand column received orders from the commander of the 27th. Army to move quickly in the direction of Kursk and by the end of the 10th. of July the forward elements reached the line Zvyagintsevo, Rozhdestvenskoye - 1st. and the main forces reached that area by the morning of the 11th. of July. By holding the designated area, they safeguarded the movement of the main force.

The order of the commander of the 27th. Army created a difficult situation for the 4th. Guards Pantemirovsk Tank Corps. The units of the Corps had to accomplish a forced march without rest and adequate preparation.

The Corps Commander ordered the advance guard composed of the 3rd. Guards Motorized Rifle Brigade, 264th. Mechanized Artillery Regiment, the 756th. Tank Destroyer Artillery Regiment, the 1st. Battalion of the 13th. Guards Tank Brigade, along the route Mosorzha, Budakova, Kursk, Medvenskoye. The remaining units of the corps remained in the area Topki, Khmelevaya, for a lengthy halt.

The units detailed for the advance guard did not stop in the area of Khmelevaya but continued their march along the designated route and reached their destination by 1800 hours on the 10th. of July, that is, 6 hours earlier than had been laid down for them, having accomplished the march at an average speed of 16km. per hour.

The main force of the Corps started to move along the route Khmelevaya, Mosorzha, Stehigry, Kursk, Rozhdestvenskoye - 1st. at 1200 hours on the 10th. of July. Moving along one road the units reached their assembly area by 0500 hours on the 11th. of July. Thus during the second half of the 10th. of July and during the night from the 10th. to the 11th. of July the corps covered a distance of about 200 kms. at an average speed of 11km. per hour.

It has to be noted that the corps was fully battle worthy when it assembled in the area of Rozhdestvenskoye - 1st., having lost only

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eleven tanks along the road, which rejoined their units during the 12th. of July. The following supplies were received in the assembly area, 1 1/2 to 2 units of fire and 1 1/2 to 3 refills of POL.

The Corps operating as a component of the 27th. Army completed a 30 km. march during the night from the 15th. to the 16th. of July, and assembled in the area of Oboyan' on the morning of that day. At 1200 hours on the 18th. of July the Corps left the area of Oboyan', marched about 50 kms. and by 1600 hours of the same day concentrated in the area of Ivnya.

Thus, in the period from the 7th. to the 18th. of July, the Corps moved a distance of 450 kms. equally divided between day and night marches and maintaining their full battle worthiness.

The success of the march was largely due to the work done by the command and staff of the Corps in organizing the march and the supervision of the units during the march. The following work was done in support of the march:

- the bounds by which the troops were to move and the rest areas were detailed early.

- in order to control the maintenance of proper timing, liaison officers or other responsible officers were despatched to the boundaries by aircraft or automobiles to ensure that the units passed their report lines on schedule.

- officer traffic control posts were stationed at all river crossings to supervise the quick and efficient crossing by the units

- repair and recovery posts and mobile repair squads were disposed along the route of march. These were drawn from the repair establishments of the brigades and the corps. These repair facilities serviced the units during the march and especially during the halts and in the concentration areas.

- the basic repair establishments of the corps followed in the technical grouping of the second echelon, and conducted work connected with the work of replacing assemblies.

Conclusion: The march accomplished by the 4th. Guards Kantemir-

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ovsk Tank Corps is primarily an example for the march of Tank and Mechanized troops. The forced march was accomplished within the limits prescribed by the Field Service Regulations of the Red Army.

During the period of the strong attack by the Germans in the direction of Belgorod from the 5th. to the 12th. of July, 1943, the tank and mechanized formations at the disposal of the high command and the commanders of the Voronezh Fronts and armies had to be re-grouped frequently. These re-groupings were connected with marches extending from ~~the~~ 25 to 150 kms. and were conducted under forced circumstances, frequently at night, with the roads being heavily used by troops, battle supplies and transport.

The details of the march by several of the tank corps in the period from the 5th. to the 12th. of July are shown in Table 4. The data is well worth analysing in detail since it corresponds closely to the requirements laid down by the Field Service Regulations of the Red Army.

No. of Tank Corps	Route	Length in miles	Time spent hours	Average speed km-hr	Tanks lost en route
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Marches in our own rear area

(a) Night Marches

2nd. Guards Tatsinsk Tank Corps	Pecchanoye to Kryukovo	30	8 1/2	9.4	11
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(b) Day Marches

2nd. Tank Corps	Urazov to Korochan	152	20 1/2	7.4	6
5th. Guards Stalingrad Tank Corps	Setnitsa to Malinin	52	5	10.4	18
10 Tank Corps	Sj. Ostol to Brokhorovka	152	10	15.2	3

Flank Marches (Day and Night)

2nd. Guards Tatsinsk Tank Corps	Kryukovo to Belenikhino	25	5	5	-
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5th. Guards Stalingrad Corps	Belenikhino to Zorinsk	66	13	5	3
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10 Tank Corps Prokhorovka	42	4	10	2
to Zorinskie Dvory				

The following points draw attention to themselves in this table:

- the average speed of night marches differs very little from that of day marches.

- the average speed of flanking marches is about half of the speed attained in straight marches to the front. The lower speed of flank marches can be explained by the fact that the columns became more extended because it had to cross roads which were needed by other units for supply routes.

- the success of a march depends to a great degree on its preparation and practice by troops.

The average speed of movement of all corps, shown in Table 4, works out at 9.5 km. per hour, but the average speed of flanking movements is 6 miles per hour.

In view of the requirements laid down in the Field Service Regulations concerning the march of tank and mechanized troops it is of interest to study marches by tank brigades on different fronts, at different times of year, and through different terrain. These are shown in Table 5.

Unit	Date	Distance	Table 5	Time spent	Average speed
			Conditions of March		
118 Tank Brigade	13 July 1942	60	Wooded, marshy, roads difficult for tanks after heavy rain.	5	12
118 Tank Brigade	13 July 1942	60	Terrain as above, night march.	8	7.5
41 Tank Brigade	6 December 1942	180	Wooded, marshy terrain, covered with 15-20 cm. snow. Roads satisfactory.	10	18
80 Tank Brigade	30 June 1942		Broken terrain, night march	5-6	6-8

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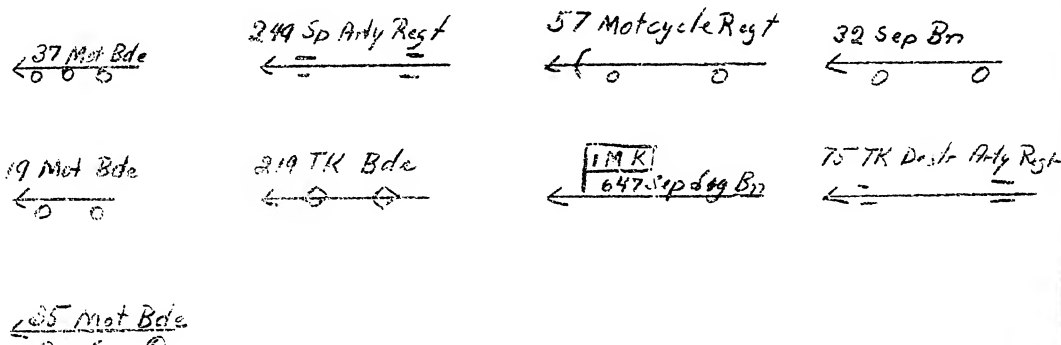
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and to assemble in the area Perevalochnoye, Poshelovo, by 0330 hours, on the 9th. of July, having one day for the march. The move was to be conducted at night. The order imposed a difficult task on the corps staff. According to the available figures, the move, due to the shortage of transport, would take three days, 61 hours, to be exact.



Sketch 9 : Order of march of the 1st. Mechanized Corps.

Because of the difficult transport position, the corps commander decided to alarm the troops and to start to move immediately in small groups of 2 to 5 vehicles. The awakened infantry subunits started to march within the hour. The work of the motor transport was divided into four trips by which to move the motorized infantry. The Tanks were to move during the night from the 7th. to the 8th. of July.

The march was organized along three columns each 6 to 10 kms. long. The order of march is shown in sketch 9.

In this instance the length of the column was 20 to 25 kms., which made higher speeds of travel possible and reduced the time required for columns to extend and re-assemble.

The hurried organization of the march showed in its progress. Thus, as a result of poor traffic control in the sector Wizhne- Devitskiy, Sovetskiy, a serious mix-up of tank subunits occurred as a

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result of which one company of the 219th. Tank Brigade made a 40 km. detour.

Despite the hurried organization of the march and the shortage of transport, the tank and mechanized units of the corps assembled in their appointed area by 0500 hours on the 8th. of July. Complete assembly, that is, the moving up of the rear and service elements, was completed towards the end of the 9th. of July.

The 1st. Mechanized Corps, therefore, did not fulfill the order issued by the Commander of the 53rd. Army. Only by the use of the described order of march, and the use of three roads, could the main elements of the corps be moved 100 kms. in one night and assemble in the designated area one day before the time laid down by the Army Commander.

On the 9th. of July the corps received orders to remove to the area Gushchino, Svinetz, and to occupy a defensive position on the south-western shore of the river Seym along the line Sorochin, Shehikunovskiy, Solntsevo, Vasil'yevka, with the task of preventing any movement by the enemy in the direction of Kursk. The units of the Corps were faced with a 100-110 km. march, with the possibility of having momentarily to fight a meeting engagement.

Having received the order, the corps staff calculated the time required for forming up the column and then to assemble the troops at the end of the march, and studied the route of march of the impending move. In order to aid the movement of the tanks across obstacles, sappers were sent ahead. A reconnaissance detachment was sent into the new area to lay signal communications, to guide the leading units, and guides to lay out the area and to direct their units to this assigned location.

← 19 Mot Bde
0 0

← 27 Mot Bde
0 0

← 5 Mot Bde
0 0

← 75 TR Det. -
Rgt

219 TR Bde
0 0

← 294 Sp Art. Bde
0 0

IMC
← 647 Sp Sig
Bn

Main Reserve
← 0 0

Sketch 10: Order of March of the 1st. Guards Mechanized Corps.

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The march was conducted along three routes and in the order shown in sketch 10.

The organizational measures taken by the Corps command and staff, and the order of march used, enabled the corps to cover 100-110 kms. in 25 hours, and by the end of the morning of the 10th. of July, it assembled in the new area.

This march by the 1st. Mechanized Corps was better organized, but nevertheless the average speed of march did not exceed 5 km. per hour.

Conclusion. The speed of movement of the 1st. Mechanized Corps was seriously limited by the shortage of transport. Therefore the speed of movement of motorized infantry did not exceed that of the rifle units.

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General Conclusion.

1. The experience of the Patriotic War shows that it was necessary on occasions to have tank and mechanized troops move themselves over distances of 300 to 450 kms.

But the transfer of large tank formations over great distances particularly under winter conditions, is not advisable : it leads to large expenditure of motor resources and wastes battle equipment.

The following distances have to be considered the maximum for re-location of armies and corps by road : in summer, up to 300 kms., in winter, 150 to 200 kms. With that it is necessary to try to transport the tanks by rail.

2. A tank army moving by road requires for its march a strip 20 to 30 kms. wide with no less than 3 or 4 roads through, but, on no account, less than two. The movement of a tank army along one road particularly in winter, leads to excessive elongation of the column, and the piecemeal commitment of units to battle (e.g. 2nd. Tank Army).

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3. Tank and mechanized corps need a 6 to 10 km. wide strip for road movement with at least one major road on it. An increase in the area of movement provides the opportunity for maximum exploitation of secondary routes which increases considerably the speed of the march, and lowers the time required for re-location. (e.g. 4th. Guards Kantemirovsk. Tank Corps).

4. It is necessary to clear the roads assigned to tank and mechanized formations for a move from all other transport. If that is not done bottlenecks develop, the speed of movement falls rapidly, and the column elongates (e.g. 2nd. Tank Army.)

5. The transfer of tanks by rail, in the frontal areas, can not be justified for distances less than 150 kms. Despite certain economies in the transport resources and in repair effort, the units of the tank formations lose in particular the timely arrival in the assembly areas (e.g. 3rd. Tank Army).

6. Commanders and staffs of all arms formations, setting the requirements for a march, should bear in mind that a tank army or corps requires no less than 12 to 14 hours to organize a march, and, in extreme cases, 5 to 6 hours, from the time the roads are prepared for the march.

The draft for Field Service Regulations lays down speeds of movement, but before they start to move, units have to form up into march columns and this takes a hour between 4 to 6 hours, and about that time is required to close up in the assembly areas on arrival.

7. Combined marches (foot and motor transport) for mechanized corps are entirely justified, particularly when there is a shortage of transport. (e.g. 1st. Mechanized Corps).

The overall FOL requirement will be determined not on the available transport but will be worked out on the basis of the transport T E of the mechanized formations, taking into account the number of trips the vehicles will have to do.

8. To ensure the successful completion of movements by tank and

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mechanized formations it is necessary to assign to them sappers as well as repair facilities from the front or army. The allocated sappers should be despatched in advance to localities which would be more or less difficult for tanks to pass. The repair facilities (mobile repair detachments) should be disposed along the route at intervals of 30 to 50 kms. from each other. The number of sappers and repair facilities will depend on the general conditions of the move.

9. Anti-aircraft Defence ; For an area of movement 20 to 30 kms. wide and 50 to 80 kms. deep, will require the assignment to the tank army of up to one anti-aircraft division. The anti-aircraft guns will be disposed primarily in the departure positions, the open stretches of the road, and in the assembly areas. The anti-aircraft defences of the marching columns should be provided from the organic corps anti-aircraft elements.

10. The proper organization of traffic control will prevent the development of traffic jams and mix-up of units along the road (e.g. 1st. Mechanized Corps), as well as making marches in small groups of 2-3 vehicles possible, as well as expediting the movement of troops

The responsibility for organizing proper traffic control and providing the necessary personnel for it along the route rests with the corps. Important defiles, important highway junctions, difficult water obstacles, having operational significance for the troops will remain under the control of army headquarters,

On particularly difficult sectors of the route (defiles, crossings, road junctions) it is advisable to assign traffic control posts, manned by officers. Traffic control posts have to be provided with a plan of the movement of the columns along the route.